



NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
JOHN F. KENNEDY SPACE CENTER
KENNEDY SPACE CENTER, FLORIDA 32899

REPLY TO
ATTN OF: AA-SVO-1/73-1-1

JAN 31 1973

MEMORANDUM

TO: Distribution

FROM: AA/Manager, Apollo-Skylab Programs

SUBJECT: Skylab Program Directive No. 60: Skylab Education Program

Skylab Program Directive No. 60 which defines the Skylab portion of the NASA Education Program is hereby distributed for your information.

A copy of the briefing note to Dr. Debus is enclosed.


Robert C. Hock

Enclosure: a/s

Distribution
Apollo-Skylab Standard Distribution "M"

JAN 26 1973

9/11/79

Dr. Debus

Subject: Skylab Program Directive No 60: Skylab Education Program

This new Program Directive defines the Skylab portion of the NASA Educational Program. These Skylab Education Program activities include: (1) Skylab Student Experiment Project, (2) A Skylab Video Documentation Project, and (3) Skylab Program support to the ongoing NASA Education Program.

This program directive establishes a Skylab Education Program Team composed of representatives from the Center and Headquarters Skylab Program Offices and Education Program Offices to coordinate the various aspects of the Skylab Education Program.

The responsibilities outlined for KSC by this program directive include:

1. Installing and checking out the Skylab Student Experiments.
2. Providing Skylab program support to the NASA Education Program.
3. Hosting an education conference for the Skylab student experimentors during the Skylab 1 - 2 launch period.
4. Providing support to the MSC television team in Skylab video documentation activities.

There is no impact on KSC test and checkout activities beyond those previously known, and we are working the other related activities.


Robert C. Hock

SKYLAB
PROGRAM DIRECTIVE NO. 60

TO:

FROM:

John H. Disher for
William C. Schneider 12/26/72
Director, Skylab Program

SUBJECT: Skylab Education Program

OFFICE OF PRIME RESPONSIBILITY: SKYLAB EXPERIMENTS (MLA)

I. PURPOSE

This directive defines the Skylab portion of the NASA educational program, and assigns responsibility for assuring effective accomplishment within the Skylab program organization in coordination with Educational Programs Division, Office of Public Affairs.

II. SCOPE

The objectives of the Skylab Education Program are to derive the maximum educational benefits from Skylab, to assist in documentation of Skylab activities, and to enhance understanding of scientific developments. Involvement of the teaching profession is a major feature of the program. In order to achieve these objectives the Skylab Education Program activities include the Skylab Student Project in which the Skylab Program has a major management and implementation role, and video documentation in which the Skylab Program role is to provide systems support. Additional activities include providing support to on-going NASA education program features such as teachers' services, lecture demonstrations (Spacemobiles), youth projects, conferences, curriculum resources, slide and film presentations, etc. This program directive pertains to each of these activities, and will be amended to include additional activities as they are identified.

III SKYLAB EDUCATION PROGRAM TEAM

A Skylab education program team shall be assembled to formulate, coordinate and evaluate the various aspects of the education program. Team membership will include personnel from NASA centers engaged in the Skylab Program, from the Educational Programs Division at Headquarters and Centers and from other organizations as necessary. Each member will represent his organization in Skylab education program activities. The chairman will be provided by the Skylab Program Office, ML, OMSF.

IV. ACTIVITIES

This section summarizes the Skylab Education Program activities.

A. Skylab Student Project

A Skylab student project has been established to encourage participation in the Skylab program by the secondary schools. Experiments proposed by high school students in grades 9 through 12 have been selected through a national contest for performance on Skylab during the Skylab orbital missions.

The student project involves the educational community in addition to NASA. The National Science Teachers Association (NSTA) has been assigned, by contract, the task of providing the interface between NASA and the schools.

The principal program activities in the student project, subsequent to identification of the twenty-five national winners, shall include:

1. Perform analyses of compatibility of the experiments with Skylab vehicles, systems and operations as an aid in selecting the flight experiments and as bases for design and development of the flight experiments.
2. Prepare concepts by which the experiment objectives may be achieved.
3. Design and manufacture such equipment as is necessary to perform the experiments selected for performance in orbit, and conduct such testing as is necessary to assure compatibility with Skylab.
4. Prepare operational planning for conduct of the flight experiments. This will include mission planning activities, stowage planning, crew training and data acquisition reduction and distribution planning.
5. Install experiment equipment in the Skylab vehicles for launch.
6. Perform the experiments in the appropriate missions.
7. Reduce and distribute experiment data to student investigators in accordance with established agreements.
8. Conduct program reviews as necessary with student participation as appropriate.
9. Conduct a Skylab Student Education Conference for the twenty-five national winners and associated relatives and educational personnel at the time of the SL-1/SL-2 launches.

A. Skylab Student Project (Continued)

Participation by the students, who proposed winning experiments, shall be encouraged in all post-selection phases of the student project. Measures shall be studied to enhance continued involvement by non-winning students and teachers in student experiment data analysis and report preparation.

B. Video Documentation

Skylab video documentation activities have been implemented with the objective of providing the widest practicable documentation of Skylab operational and experimental activities and of the results obtained. The documentation will be made available for dissemination by commercial, public and educational television networks, independent producers of television programs for public information and for education purposes, and others whose must rely on video as a source of production materials documenting Skylab activities.

Skylab Program elements, in support of this objective, shall:

1. Evaluate the Skylab program flight hardware and ground facilities to determine their suitability for the photography required as inputs to video documentation, and make recommendations for optimization of capabilities.
2. Perform an end to end evaluation of the Skylab television system (cameras, video tape recorder, transmitter/antenna system, ground receiving systems and ground links to MSC); an evaluation of TV picture taking opportunities, operation of the Video Tape Recorder; and an evaluation of the opportunities for real time and delayed transmission to MSC.
3. Perform an evaluation of the flight planning aspects of television usage to determine the crew operations and mission activity implications, and develop and implement the flight and mission planning and crew training requirements to ensure that final television requirements are achieved.
4. Prepare background information and applicable documentation materials on Skylab vehicle, mission, and pre-flight activity in advance of the initial launch and prior to each follow-on mission.
5. Provide real-time and near real-time transmission of in-flight audio/visual documentation of operational and experimental activities.

B. Video Documentation (Continued)

6. Prepare information and applicable documentation materials on the results of vehicle, mission, flight, and postflight activities subsequent to each mission and for the total program.
7. Provide information to support an indexed repository of video and other applicable Skylab documentation materials for release by NASA Public Affairs offices as required to meet the production needs of television and motion picture producers as well as secondary users who incorporate such materials in other audio-visual applications.

C. Teacher Services

Teacher education programs are on-going activities of the Educational Programs Division of the Office of Public Affairs. These are conducted with colleges and universities, and local and regional boards of education to provide information and understanding of space developments. Educational materials and activities are prepared for use by the Education Program Officers and their space science specialists for use in workshops and courses for teachers. The Skylab Program shall provide the background information as required in support of these activities.

D. Lecture Demonstrations (Space Science Education Project - Spacemobiles)

The lecture demonstration program is also an on-going activity of the Educational Programs Division and uses scale models of NASA spacecraft, launch vehicles, science experiments and visual aids transported in panel trucks (Spacemobiles). The lecturers are science teachers trained by NASA as space science specialists to present school assembly programs, work with teachers and students in the classrooms, conduct teacher education programs and meet with civic groups, and youth groups including underprivileged and inner-city students as well as highly talented groups. The Skylab Program shall provide the necessary background information to support these activities.

E. Conferences - Speaker Services

In another Educational Programs Division activity speakers are provided for local, state, regional and national conferences conducted by professional educational organizations to provide information about NASA's activities and their results. The Headquarters Educational Programs Division and center offices also conduct conferences at the NASA centers for selected groups of educators to interpret NASA's aerospace programs and the implications for education. The Skylab Program shall provide speakers at these conferences from the headquarters and centers to inform the educational community of Skylab. This conference program at present includes such special efforts as: the 50-state program for science teachers, the 50-state program for industrial education teachers, the regional and national conference programs for professional education associations and launch visit programs.

F. Curriculum Resources

Preparation of curriculum resource material for elementary, junior and senior high school teachers is an Educational Programs Division activity. The Skylab Program shall support this activity by making available information and consultative advice. Of particular value will be the objectives, plans, and results of Skylab experiments, (both baseline and students') with discussion of their nature and operation. Experience gained in implementing the student project will be applied to this field of activity.

G. Slide and Film Presentations

Slides and films of the Skylab Program shall be made available to the Center Education Program Officers and the Spacemobile lecturers for use in the lecture-demonstrations and classroom presentations for students and teachers.

H. Youth Programs

NASA's educational program involvement with youth in out-of-school activities includes, in addition to the Skylab Student Project (Paragraph IV-A), other projects such as: Youth Science Congresses, Science Fairs, Scouting, and special programs for disadvantaged youth. Skylab Program personnel will be called on from time to time to support such programs by giving talks, serving as judges and acting as consultants.

I. Adult Programs

The Education Programs Division assists adult education institutions as well as civic groups in the conduct of their programs. Skylab Program personnel will be requested from time to time to address such groups.

J. Reporting

The Skylab Program activities uniquely applicable to the Skylab Education Program shall be documented in a Skylab Education Program Report. The objective of the report will be to evaluate and document the conduct and results of Education Program features such as the Skylab Student Project.

J. Reporting (Continued)

Reporting of Skylab Program activities to the teaching profession will be included in a projected NASA Educational Programs Newsletter as well as being the subject of a special Skylab Program Education Project Newsletter. These newsletters will be prepared by the Office of Public Affairs with inputs from Skylab Program elements, and will be published at irregular intervals as program events suggest.

Students involved in the Student Project shall be encouraged to submit reports of their experiments for application to the curriculum resources activities and for inclusion in Skylab Mission Experiment Reports.

V. RESPONSIBILITIES

The division of responsibility for the various activities comprising the Skylab Education Program within the NASA organization is defined in the following paragraphs:

A. Headquarters

Office of Manned Space Flight - Skylab Program Office - The Skylab Program Office has the responsibility for direction, overall planning and coordination of all Skylab education program activities. As a part of this responsibility it will provide the leader for the Skylab education program team.

The Skylab Program Office has the responsibility for defining the goals and objectives for the student project and for establishing limits for the student impact on the Skylab Program. The Program Office also has the responsibility for establishing mission assignments for student project experiments.

Skylab Program Office will monitor and provide overall direction and guidance to Skylab program activities in support of video documentation.

Skylab Program Office will also aid the Educational Programs Division of the Office of Public Affairs in performance of their activities in the following areas:

1. Coordination between NASA and the educational community through the NSTA for the effective conduct of selected phases of the Skylab student project.
2. Other educational activities as defined in paragraphs IV B through IV I.

V. RESPONSIBILITIES (Continued)

Skylab Program Office will aid the Office of Public Affairs in promoting public involvement in Skylab.

Skylab Program Office has the responsibility for preparing the Skylab Education Program Report.

B. Kennedy Space Center

KSC has prime responsibility for installation and checkout of equipment developed in the Skylab student project in support of MSFC as integrating center. As part of this activity, KSC will provide a permanent member to the Skylab education program team, and will prepare inputs to the MSFC Student Project Plan defining its activities in support of project activities. KSC also has the responsibility for providing support to the MSC television team in video documentation activities.

In addition, KSC will provide support as required to other Skylab education program activities listed in Section IV, and will host a Skylab Student Education Conference at the time of the initial Skylab Launch, in conjunction with Education Programs Officers.

KSC shall provide inputs to the Skylab Education Program Report and to newsletters as required.

C. Manned Spacecraft Center

MSC Skylab Program Office has the lead role in, and the responsibility for managing, Skylab video documentation activities listed in Paragraph IV B and shares responsibility with MSFC for assurance of adequate television system performance. MSC will prepare a Skylab Television Plan containing detailed definition of program activities in this area.

The Skylab Program Office also has prime responsibility for integrating Skylab student project orbital activities into operational flight planning and crew activity aspects of the Skylab program in support of MSFC as integrating center. MSC also will support MSFC in compatibility analyses, hardware concept development and design review activity for student project experiments. MSC will prepare inputs to the MSFC Student Project Plan.

V. RESPONSIBILITIES (Continued)

C. Manned Spacecraft Center (Continued)

MSC shall also support other Skylab education program activities as required and shall provide inputs to the Skylab Education Program Report and newsletters as required.

D. Marshall Space Flight Center

The MSFC Skylab Program Office has the lead role in the Skylab student project in that it has the prime responsibility for integrating the activities of the other Manned Space Flight centers related to development, certification and integration of student project experiments in the Skylab Program.

MSFC has the responsibility for preparing a detailed plan for the conduct of the student project.

MSFC also has responsibility for providing support to MSC video documentation activities and has the joint responsibility with MSC for assuring adequate onboard television production facilities and television system performance as defined in Paragraph IV B.

MSFC Skylab Program Office will support other Skylab education program activities as required, and shall provide inputs to the Skylab Education Program Report and newsletters as required.

E. Other NASA Centers

NASA Centers not discussed above (e.g., Ames Research Center, Langley Research Center, Lewis Research Center, etc.) may be requested to provide support to Skylab education program activities.

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